Name: Date:

Polynomial Factoring practice (version 12)

1. **The quadratic formula says if $ax^2 + bx + c = 0$ then $x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$. Use the quadratic formula to solve the following equation.**

   $$x^2 + 4x + 31 = 0$$

   Simplify your answer(s) as much as possible.

2. **Express the product of $9 - 4i$ and $3 + 6i$ in standard form $(a + bi)$.**

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3. **Write function $f(x) = x^3 - 11x^2 + 34x - 24$ in factored form. I'll give you a hint: one factor is $(x - 4)$.**

4. **Polynomial p is defined below in factored form.**

$$p(x) \;=\; (x+7)\cdot(x+4)^2\cdot(x-1)^2\cdot(x-5)$$

Sketch a graph of polynomial $y = p(x)$.